Details on MaskTrack Project :

**Model Description :**

* The Segmentation library has been used to deploy **Unet model** with **Resnet18** backbone.

* The said library facilitates model deployment as it has a rich variety of architecture options for segmentation tasks.

* Weights have been random initialized.

**Data Processing set up:**

* Data Generator class has been created for creating data batches during training.

* During  **Training,** each epoch consists of user given number of iterations ( var batch\_count in DataGenerator).

* During each iteration, a video class is randomly chosen

* Then a batch ( size being equal to var batch\_size) of 4 channel inputs consisting of frames + prior masks ( frame i + mask of ( i-1)th frame) are selected randomly from all the given frames of the chosen video class ( first and last 3 frames are kept out of selection )

* It is ensured that every video class are selected at least **N** number of times (**N** = batch\_count / no of video class)

* The 4th channel mask are modified through translations and elastic deformation of random amounts.

* For **validation** data, the 3rd last and 2nd last frames of every video class has been selected with no transformation of the mask.

**Hyper Parameters :**

Loss : binary cross entropy

Optimizer : Adam

LR Rate : .0001

Accuracy : iou score